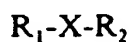


**STRUCTURALLY DETERMINED**  
**METALLO-CONSTRUCTS AND APPLICATIONS**

**ABSTRACT OF THE INVENTION**

A metallo-construct, which may be a peptide, is provided for use as a biological,  
5 therapeutic, diagnostic imaging, or radiotherapeutic agent, and for use in library or  
combinatorial chemistry methods. The construct has a conformationally constrained  
global secondary structure obtained upon complexing with a metal ion. The peptide  
constructs are of the general formula:



10 where X is a plurality of amino acids and includes a complexing backbone for  
complexing metal ions, so that substantially all of the valences of the metal ion are  
satisfied upon complexation of the metal ion with X, resulting in a specific regional  
secondary structure forming a part of the global secondary structure; and where  $R_1$  and  
15  $R_2$  each include from 0 to about 20 amino acids, the amino acids being selected so that  
upon complexing the metal ion with X at least a portion of either  $R_1$  or  $R_2$  or both have a  
structure forming the balance of the conformationally constrained global secondary  
structure. All or a portion of the global secondary structure, which may be synchrologic  
or rhegnylogic, may form a ligand or mimic a known biological-function domain. The  
construct has substantially higher affinity for its target upon labeling with a metal ion.

ES  
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